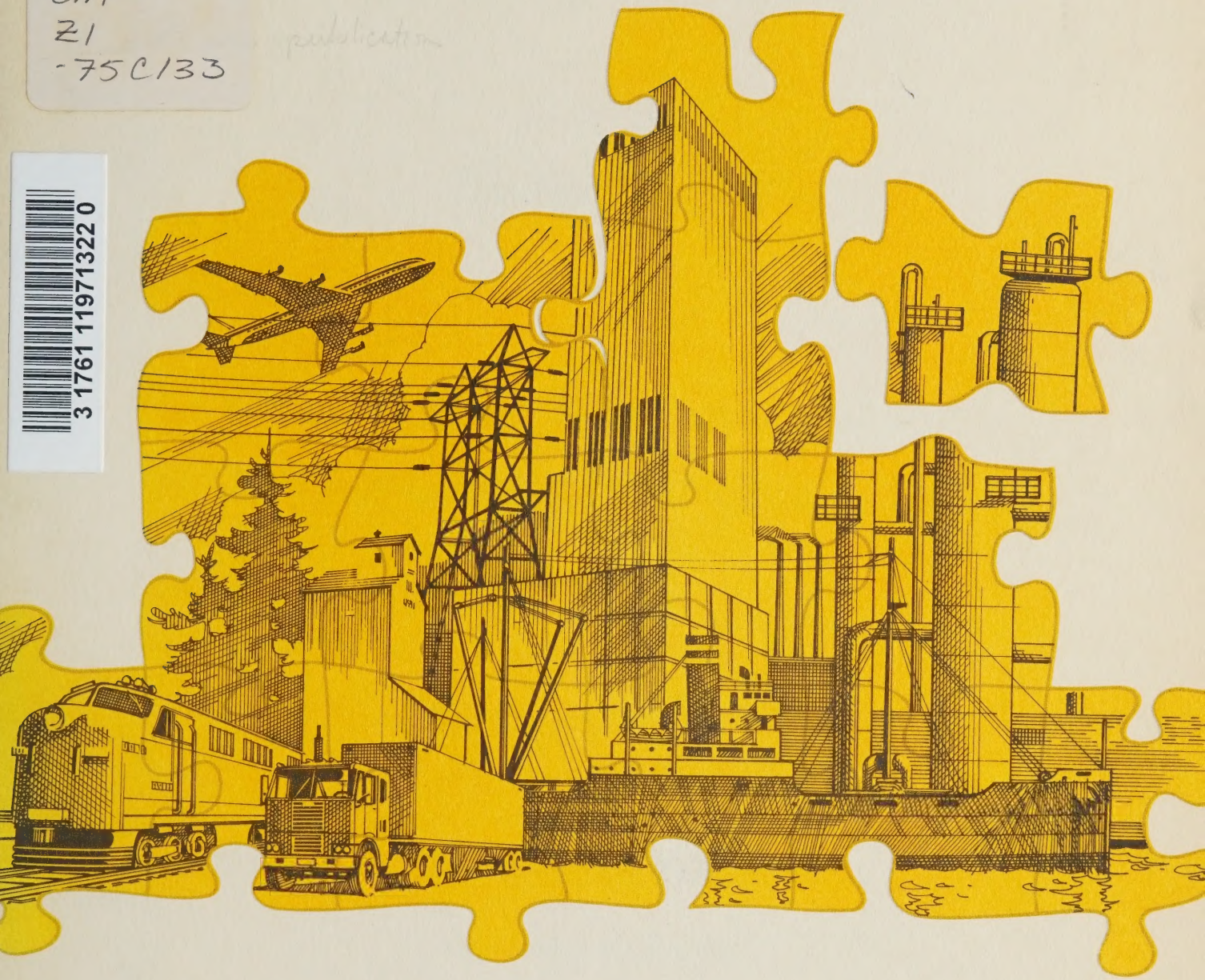
Royal Commission on Corporate Concentration



STUDY NO. 33

Organization Size as a Factor Influencing Labour Relations

A Background Report

Royal Commission on Corporate Concentration

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by

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FOREWORD

In April 1975, the Royal Commission on Corporate Concentration was appointed to "inquire into, report upon, and make recommendations concerning:

(a) the nature and role of major concentrations of corporate power in Canada;

(b) the economic and social implications for the public interest of such concentrations; and

(c) whether safeguards exist or may be required to protect the public interest in the presence of such concentrations".

To gather informed opinion, the Commission invited briefs from interested persons and organizations and held hearings across Canada beginning in November 1975. In addition, the Commission organized a number of research projects relevant to its inquiry.

This study on corporate size as a factor influencing labor relations is one of a series of background studies prepared for the Commission. It examines the possible effects of size on individuals and labor relations within organizations.

The author is Terrence H. White, who is Chairman of the Department of Sociology at the University of Alberta in Edmonton. Professor White has previously written on Canadian labor and international unions, and on decision-making in Canadian corporations.

The Commission is publishing this and other background studies in the public interest. We emphasize, however, that the analyses presented and conclusions reached are those of the author, and do not necessarily reflect the views of the Commission or its staff.

Donald N. Thompson
Director of Research

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INTRODUCTION

With the introduction of industrialization, most societies have experienced a dramatic growth in the numbers and importance of organizations. There is scarcely an activity in our lives that is not affected by organizations. Even when we die, "Most of us will die in an organization," says Amitai Etzioni (1964:1), "and when the time comes for burial, the largest organizations of all - the state - must grant official permission." The evolution of industrial production has seen new organizational forms develop to facilitate the mobilization of the capital necessary to ensure the maximum use of these rational production methods; the sole proprietorships and partnerships characteristic of the early industrial era, have largely given way to the corporations of contemporary times.

This rise in the importance of organizations has been accompanied by increases in their sizes. In an examination of manufacturing establishments in major Western societies, Pryor (1972) found that there has been a steady increase in their average size, as measured by the number of persons employed. Caplow (1964:35) maintains that increases in the absolute sizes of organizations are due to "...the combined influence of population growth, urbanization, and the refinement of communication and record keeping."

This paper is concerned with organization size and specifically with establishment size.[1] It examines the effects of size, if any, on individuals and labour relations within organizations.

ORGANIZATION SIZE

The growth patterns in organization size referred to above have also been present in Canada. Table I summarizes data on the numbers of Canadian manufacturing establishments since 1949, according to their size. It is quite apparent that for every time period in the table, the majority of establishments have been small in size, with fewer than 50 employees. Examination of the trends in establishment size over the last 20 years reveals a steady decrease in both the absolute numbers and proportions of establishments employing less than 50 persons; from almost 34,000 in 1955, to under 25,000 in 1973, a reduction from 88.5 per cent to 79.5 per cent of the total number of manufacturing establishments. While the data is not shown in Table 1, the most noticeable decline has occurred in the smaller establishments with fewer than five employees: in 1955 this represented almost one-half of all Canadian manufacturing establishments; by 1973, less than one-third were of this size.

During this same period there has been a countervailing increase in the prevalence of larger establishments, particularly those in the 50-499 employee size range.

More relevant to our interest in the effects of organization size on employees is the proportion of the labour force employed in various-sized establishments. Although the largest numbers of manufacturing establishments have fewer than 50 employees, it is clear from Table 2 that they employ only a small and declining proportion of the manufacturing labour force - 23.2 per cent in 1949, and 16.9 per cent in 1973.

The most noticeable positive shift has occurred in the 200-499 employee category. In 1949, 18.3 per cent of manufacturing employees worked in establishments of this size and by 1973, the figure had reached 23.0 per cent. For this same time period, the average (median) size of establishments in which people worked rose from roughly 233 employees in 1949 to 264 in 1973.

Regardless of individual shifts in proportions of the labour force working in various-sized establishments, one constancy since 1949 can be noted, over one-half of the Canadian manufacturing labour force has consistently worked in establishments of 200 employees or more. This, coupled with the increasing average size of working establishments, and the fact that over 300 thousand people already work in very large manufacturing settings of 1,000 or more employees, makes the issue of organization size and its effects on workers and labour relations not only of immediate importance, but of long-term significance as well.

PREVIOUS RESEARCH

Size and Structure

Organization size, employed mainly as an independent variable, has figured in numerous research studies. Because of the convenience and ease

TABLE I

NUMBER OF ESTABLISHMENTS BY EMPLOYEE SIZE

Number of Employees	Number of Establishments 1949	1955	1961	1971	1973
Under 50	88.7% (31,747)	88.5% (33,806)	84.9% (28,315)	81.0% (25,832)	79.2% (24,659)
50 - 99	5.3% (1,905)	5.5% (2,082)	7.3% (2,445)	8.6% (2,738)	9.0% (2,800)
100 - 199	3.1% (1,114)	3.1% (1,175)	4.1% (1,377)	5.6% (1,801)	6.2% (1,923)
200 - 499	1.9% (694)	1.9% (739)	2.6% (869)	3.4% (1,091)	4.1% (1,275)
500 - 999	.9% (332)	.6% (243)	.7% (243)	1.0% (313)	1.1% (343)
1,000 +		.4% (137)	.3% (108)	.4% (133)	.5% (145)
Total	99.9% (35,792)	100% (38,182)	99.9% (33,357)	100% (31,908)	100.1% (31,145)

Source: Table 5 in Type of Organization and Size of Establishments 1971, Statistics Canada and Table 5 in Type of Organization and Size of Establishments 1973, Statistics Canada, excluding Head Office, sales offices, and auxiliary unit personnel.

TABLE 2

PERCENTAGE OF PERSONS EMPLOYED IN VARIOUS-SIZED ESTABLISHMENTS

	Percentage of Persons Employed				
Size of Establishment	1949	1955	1961	1971	1973
Under 50	23.2% (269,359)	22.4% (287,386)	21.0% (272,603)	18.1% (281,516)	16.9% (283,337)
50 - 99	11.4% (132,069)	11.3% (144,411)	13.0% (169,319)	12.3% (191,194)	11.7% (196,521)
100 - 199	13.4% (156,084)	12.7% (163,091)	14.7% (190,540)	16.3% (253,101)	16.2% (270,842)
200 - 499	18.3% (213,130)	17.8% (227,667)	20.2% (261,628)	21.2% (329,101)	23.0% (386,014)
500 - 999	33.7% (391,455)	13.1% (167,720)	13.1% (169,392)	13.8% (213,683)	14.0% (234,654)
1,000 +		28.8% (292,253)	18.1% (234,320)	18.2% (283,010)	18.2% (304,273)
Total	100% (1,162,097)	100.1% (1,282,528)	100.1% (1,297,802)	99.9% (1,551,605)	100% (1,675,641)

Source: 1949, 1955, 1961, and 1971 are contained in Table 5, Manufacturing Industries of Canada, 1971 and 1973 data are contained in Table 5, Manufacturing Industries of Canada, 1973. (Note: persons employed in Statistics Canada's category "Employed in Head Offices, sales offices, and auxiliary units" are excluded from our table because no data on their distribution by organization size are provided.

of measurement, it is frequently utilized in analyses as part of a battery of contextual variables that might be useful in accounting for variance in numerous dependent variables, ranging from those descriptive of organization structures to behaviours and attitudes of individual members of organizations. Theoretical rationales behind the utilization of organization size as a predictor often are not clear and the effects ascribed to changes in size are sometimes little more than speculative.

For instance, since Max Weber's assertion that bureaucratization is more typical of large organizations than small ones, increasing size in organizations is thought by many to lead to negative consequences for its members and clients. Large size is thought, for example, to lead to an increase in the proportion of people devoted to administration. "There is an almost universal belief," says Theodore Caplow (1957:502), "that administrative and overhead costs of any organization increase out of proportion to increases in its size."

Part of the supporting argument is that the necessity of directing larger numbers of people makes it impossible to continue to employ the personalized, centralized style of management typical of smaller establishments. Instead, with growth, a more decentralized style using impersonal mechanisms of close control is adopted which requires greater numbers of administrators and clerks, with the system eventually becoming top heavy (cf., Child, 1973).

In fact, extensive research on the relationships between size and administrative ratio in organizations generally has shown that instead of the expected positive relationship, there is an <u>inverse</u> relationship. That is, as the size of organization increases, the proportion of persons in it devoted to administration or supervision actually decreases (cf., Blau, 1972; Champion, 1975; Hawley, 1965; Hendershot, 1972; Indik, 1964; Melman, 1951; etc.). In general, because proportionally fewer people in larger organizations are devoted to supervision, the spans of control are broader than in smaller organizations.

Commenting on the association between size and administrative economies of scale, Tracy and Azumi (1976:82) note:

> The theoretical reasons for this are twofold: first, larger organizations are better able to group individuals performing related tasks within the same administrative unit so that the incremental burden on the supervisor decreases with each new addition to the group, and secondly, as organizational size increases, so does the possibility of routinizing tasks performed and programming their interrelationships in advance.

It has been found that a more important consideration in administrative ratios than increasing size is the complexity of the organization; that is, the number and nature of functions performed. Administrative economies of scale become more difficult to maintain when organizational complexity increases. Narrower spans of control are necessary to ensure adequate feedback and adaptability in such situations. Researchers have been

consistent in reporting a positive relationship between organizational complexity and administrative ratios (cf., Anderson and Warkov, 1970; Blau, 1974, 1976; Champion and Betterdon, 1974; Child, 1973; Tracy and Azumi, 1976; Woodward, 1965).

Organization Size and Individual Attitudes and Behaviour

Unlike the continuing research of Blau and the Aston Group into the associations between organization size and certain dimensions of organization structure, there has been no systematic approach to studying the relationship of size and the behaviours and attitudes of individual employees. As a result, the research on this subject currently available is spotty in its coverage, scattered across many disciplines, and frequently inconsistent in its findings.

As an example, reports on accident rates and their association with size of organizations have been very mixed. Accident rates in British coal mines reportedly were twice as high in larger mines than in smaller ones (Acton Society Trust, 1953). Revans (1958:177) confirms this positive association between mine size and accident rates for British miners, but he notes: "In America the result is quite different; the rate rises to a maximum in mines from 100 to 300 and then falls sharply." Continuing with a summary of other research, Revans also reports that a study of 3,500 U.S. manufacturing plants found an inverse relationship between accidents and plant size; while research involving hospital workers discovered a positive trend between accident rates and the size of hospital in which people worked.

Over a quarter of a century ago, James Worthy (1950:173) published an article in which he suggested: "Our researches demonstrate that mere size is unquestionably one of the most important factors in determining the quality of employee relationships: the smaller the unit, the higher the morale, and vice versa." His position, apparently based on his long experience with the Sears Roebuck Company in the United States, had a pervasive influence, even though he provides no data base on which to assess the validity of his conclusions. In fact, some studies agree with his view and have found an inverse relationship between size and morale (cf., Hemphill, 1956; Hewitt and Parfit, 1953; Katz, 1949; and Talacchi, 1960).

There have been, however, very few attempts to test Worthy's contentions. One of the few reported was Meltzer and Salter's (1962) examination of 704 physiologists employed in research organizations. They discovered that a curvilinear relationship existed between organization size and satisfaction levels for research physiologists. Physiologists in medium-size organizations were more likely to be satisfied than others. They also report no relationship between size and productivity levels.

On a dimension of individual behaviour, several studies report inverse relationships between organization size and productivity levels. Marriott (1949) found this to be the case in automobile factories, and Thomas (1959) in social service agencies. In the latter case, size of the host community was a more important predictor than agency size. Herbst's (1957) work in sales organizations and Revan's (1958) in coal mines also

produced a curvilinear relationship, with the maximum productivity achieved in medium-sized organizations.

Research on turnover rates[2] also appears to be less than straightforward. Levine (1957) found nursing personnel in larger hospitals more likely to experience higher turnover rates. In an assessment of turnover in manufacturing, Armknecht and Early (1972) believe other factors such as work hazards, lack of opportunity for promotion, and low wages to be more important predictors. Another study by Talacchi (1960) discovered no significant relationship between individual satisfaction levels and turnover rates.

A PERSPECTIVE

Existing research on the association between organization size and employee attitudes and behaviour, then, is neither systematic nor consistent. It would appear that organization size has figured as a research variable mainly because of its convenience and ease of measurement, and not because of its empirically established theoretical relevance. Organization size, of course, correlates with many other variables, but its explanatory value will be established only through a partialling out of effects in longitudinal analyses. On the basis of research to date, it is unclear whether it is organization size to which one should attribute effects, or whether organization size is masking the effects of variables such as market share, ownership, and so on.

It would seem appropriate at this point to reflect and inquire, "Why should organization size be an important consideration when researching individual employee attitudes and behaviours?" There can be little doubt from theoretical and empirical grounds that the scale or size of an organization has the potential to influence attitudes and behaviours of individuals working within it. But as Pugh and Hickson (1973:60) caution,

> ...it is not only a question of size, as the profile of Organization D shows. It has the same number of employees as Organization B and yet its structure is in striking contrast and is more nearly that of a much larger firm. Clearly the policies and attitudes of the management of an organization may have a considerable effect on its structure, even though factors like size, technology, form of ownership, etc. set the framework within which the management must function (italics provided).

The scale of an organization influences the framework within which people must function, but as Pugh and Hickson suggest, what is more important is how they elect to function within their structural parameters. In other words, the consequences of various organizational structural arrangements will depend more on the internal dynamics of organization.

In a critique of Peter Blau's focused attention on structural variables alone, Chris Argyris (1973:79-80) argues that in assessing the consequences of size, for example,

> I do not believe that it is possible to derive a priori hypotheses about these issues or to make ad hoc explanations without including the nature of human beings in one's theory. Blau's human being is narrowly rational and obediently submissive to the organization.
>
> Is there not ample research to show that participants will create informal activities to counteract the formal and, in turn, that these informal activities may eventually become a cause of change of the formal structure and/or part of it? If one excludes these individual and group dimensions when one observes empirical variations in hierarchy, specialization, and impersonality, one may not be able to explain validly the variance; or one may develop generalizations that are invalid.

Our perspective in this paper is that organization size alone is not a major determinant of individual attitudes and behaviours. Size may increase the probability that certain structural arrangements are present, but what is more important is how people in their actual behaviours adapt or fail to adapt to these potential situations.

Technology, for example, is an important consideration. If one is observing two large organizations - one with an assembly-line technology and the other with a process technology - then although their size is constant, we would anticipate a probability of differences between the two in employee attitudes and behaviours. There is, for instance, a greater likelihood that the fixed work stations in assembly-line settings will generally impede the development of social relationships among workers. Whereas, process technology has been found to be highly conducive to the establishment of social relationships among workers on the job. Robert Blauner (1964:179) has reported on these tendencies:

> ...though chemical plants and oil refineries are spread out over a large terrain, they are decentralized into a number of individual buildings or subplants that are spatially separated from each other. In each of these a different product is made or a particular process is carried out by a crew of operators who have collective responsibility for certain parts of it. The 'Balkanized' units and the work teams attached to them serve as centers of employee loyalty and identification and give work in the continuous-process industries a cohesive 'small plant' atmosphere, even though the employer is actually a large national corporation. Informal work groups are even more important to the worker and more central a factor in over-all morale in machine and assemblyline technologies because the

> unskilled, repetitive jobs lack intrinsic gratification and make social satisfaction more imperative. Unfortunately, cohesive work groups are a problematic outcome in these technologies, because, unlike process production, they do not naturally result in team operations or collective responsibilities.

Supportive group settings in the work milieu have been found repeatedly to be important factors contributing to positive individual worker attitudes. Regardless of organization size, therefore, technologies that enable cohesive groups or "informal structures" to develop are more likely to have positive impacts on worker attitudes and behaviours than those which inhibit or restrict the development of group ties.

Blauner's observations also contain another important factor associated with worker attitudes and behaviours. When workers are given responsibility for certain tasks and the necessary autonomy to complete them, their attitudes and behaviours are likely to be more positive. There has been a considerable research effort that has demonstrated the positive relationship between autonomy or responsible control over one's work and resulting job satisfaction levels (cf. Wickert, 1951; Trow, 1957; Bass, 1960; Turner and Lawrence, 1965; Davis, 1966).

Another consideration is the nature and extent of supervision. A supervisor has ample opportunity to affect the working environment in many ways as a communication link with the larger organization; as one able to create, perhaps, conditions where autonomy may be maximized, and so on. Numerous studies have examined the supervisor's role and found it to be a critical contributor to worker attitudes and behaviours (cf., Fleishman, 1960; Korman, 1966; Lammers, 1967; and Evans, 1968).

Individual workers also have a surprisingly high interest in mobility opportunities within their organizations (cf., White, 1974). A large majority want to move ahead and their assessment of opportunities for advancement affect their perceptions of the organization. This is an important consideration in the work situation that is often underestimated or ignored in most studies of non white-collar workers.

We will not attempt to construct a sophisticated model, or to rank a multitude of explanatory variables. Instead, our position is a simple one. There is no theoretical or empirical basis to believe that organization size by itself will be a major variable contributing to explanations of variance in the attitudes and behaviours of individual members. The size of an organization, indeed, may set certain conditions, but more crucial considerations will be the organization's technology, the mobility opportunities for employees within their organizations, the nature and quality of supervision, the opportunities for cohesive groups and other social networks to develop, and the autonomy afforded workers in their jobs.

SAMPLE

In order to test our assertions, data from a random sample of 11 variously-sized manufacturing establishments in Southern and Central Ontario will be employed.[3] The 11 organizations ranged in size from 100 to 1,400 hourly rated production workers. The total on-site personnel of the sampled organizations, including office, production, and maintenance employees, was almost 10,000. The technologies employed included process, assembly line, piece work, machine tending, small batch, and various combinations of these.

Payroll lists for the participating organizations were modified so that individual workers were rearranged into their normal work groups of colleagues with whom they usually worked. These groups ranged in size from two to sixteen workers. All of the groups were arranged according to their main functional specialities in the plant, and were randomly sampled in a ratio approximating their frequency in the overall plant population (e.g., roughly the same number of welders in the sample as in the organization). Groups rather than individuals were sampled and this resulted in 552 respondents (slightly more than a 10 per cent sampling). Each respondent completed a questionnaire on company time and in addition, immediate supervisors rated the quality, on a number of dimensions, of each respondent's work.

MEASURES

Size

Organization size may be measured in a number of ways. We might evaluate the scale of an organization, for instance, by reference to certain economic indicators such as net sales, assets, profits, or consider the number of units produced in a fixed time period, and so on. But with our concern in this paper for labour relations, a more relevant assessment is whether changes in the number of persons in the work setting have consequences for labour relations. More particularly, because our attention is on the manufacturing plant as the work setting, the measure of size should probably be the number of hourly rated production workers. But the numbers of hourly rated production workers in our sample of organizations range from 100 to 1,400. As a result, a logarithmic transformation of size will be employed in order to reduce what Blalock (1972) describes as the "bending effect". Our measure of size, therefore, is the logarithmic transformation of the number of hourly rated production workers at each establishment sampled.

Labour Relations

We shall use "labour relations" broadly to mean the state of interactions between the workers and the organization. This will include not only their attitudes about various matters, but also certain of their

behaviours. Rather than a single measure of labour relations, we will look at a number of indicators. The Cornell Job Description Index, for example, will be employed to measure individual job satisfaction. It provides measures of satisfaction on five job dimensions: work, pay, promotion opportunities, supervision, and fellow workers. Respondents were also asked to rate the quality of labour relations in their organization when compared with those in other organizations with which they were familiar. Five-point Likert scales were used to obtain their evaluation of their current work place, and the chances of their remaining with their current employer. A final and more obvious measure of labour relations - the incidence and severity of strikes - will be assessed at a later point in this paper.

FINDINGS

Relationships, for our sample, between organization size and a number of dependent variables of interest are contained in Table 3. There is a strong direct association between organization size and a positive assessment by individual workers of the labour relations situation in their company. Positive relationships with organization size were also observed for satisfaction with one's work and total job satisfaction (the sum of satisfaction scores on all five dimensions), intra-organization promotion opportunities, positive recognition by the company and supervisors of one's work efforts, job autonomy, group cohesiveness, pay rates, and supervisor ratings of individual work performances. The opportunities to use one's skills in the job were highest in the sample for the smaller and larger organizations, and lowest for medium-sized organizations.

While positive associations with organization size generally are observed for the above variables, it will be recalled that our expectation is that size will be relatively unimportant in its explanatory power when compared with other variables in the work milieu. We suggested that more important considerations affecting labour relations will be the opportunities for cohesive groups and other social networks to develop in work settings, the autonomy afforded workers in their jobs, the nature and quality of supervision, and the mobility opportunities for employees within their organizations. As a result, multiple regressions using our data were performed to determine the relative importance of various predictors.[4]

Evaluation of Company

Each worker's evaluation of their present employer as a place to work is the dependent variable in our first regression analysis. A high score on this variable indicates that the respondent believes, all things being considered, that the company is a very good place in which to work.

Results in Table 4 reveal that organization size accounts for only three per cent of the variance in an individual's evaluation of their company as a place to work. Individual assessments of promotion opportunities within an organization, by comparison, accounts for six times

TABLE 3

CORRELATION RATIOS (ETA) BETWEEN ORGANIZATION SIZE AND CERTAIN DEPENDENT VARIABLES

	Organization Size With:	Eta*
1.	Hourly base pay rate	.71
2.	Positive evaluation of company as work place	.48
3.	Labour relations climate, "Thinking of the relations between workers and management, how does this company compare generally with others as a place to work?"	.47
4.	Chances of remaining with company	.45
5.	Total job satisfaction	.38
6.	Promotion opportunities within company for workers	.37
7.	Satisfaction with work	.26
8.	Work group cohesiveness	.25
9.	Positive support from company	.25
10.	Autonomy in job	.22
11.	Evaluation of work performance by supervisor	.22
12.	Positive support from supervisor	.21
13.	Opportunity to use one's skills	.19

* All coefficients significant at at least .01 level.

TABLE 4

REGRESSION RESULTS WITH POSITIVE EVALUATION OF COMPANY AS A PLACE TO WORK AS DEPENDENT VARIABLE

(To ensure parsimony, only variables significant at at least the 001 level were allowed to enter the equation)

$R = .62$ ($<.001$) $R^2 = 38.3\%$ $N = 352$

Variables In Regression Equation	Beta	Variance Explained By Each Variable	Cluster	Variance Explained By Each Cluster
1. Organization Size	.191	3.1	Organization Size	3.1%
2. Promotion Opportunities	.302	20.0	Promotions	20.0%
3. Group Cohesiveness	.134	6.2	Groups	7.6%
4. Positive Feelings About Work Group	.123	1.4		
5. Company Recognition of Work Efforts	.123	2.7	Supervision	4.4%
6. Supervision Style - Initiation of Structure	.129	1.7		
7. Non-Work-Task From Supervisor	.123	1.8	Work Autonomy	2.4%
8. Work-Task Autonomy From Group	.081	.6		
9. Age of Worker	.093	.8	Personal Characteristics	.8%

as much of the variation. Also more important than size in terms of variance explained are variables concerned with group or social dimensions of the work milieu, and those related to supervision.

Previous analyses of supervision styles have isolated two major patterns: 1. Initiation of Structure, and 2. Consideration. Each of these is defined in the following terms:

> Initiation of Structure: reflects the extent to which an individual is likely to define and structure his role and those of his subordinates toward goal attainment. A high score on this dimension characterizes individuals who play a more active role in directing group activities through planning, communicating, information, scheduling, trying out new ideas,... Consideration: reflects the extent to which an individual is likely to have job relationships characterized by mutual trust, respect for subordinates' ideas, and consideration of feelings. A high score is indicative of a climate of good support and two-way communication. A low score indicates the supervisor is more likely to be impersonal in his dealings with group members (Fleishman, 1960:3).

Initiation of structure is the particular supervision style contained in this regression equation.

Commitment to Organization

An important consideration for any organization is the necessity of maintaining continuity in its work force. Turnovers of personnel are costly, not only in terms of inconvenience and time lost, but also in the expenditures necessary to recruit and train replacements, no matter how simple the job. As a result, another pertinent indicator of the general health of labour relations is whether people wish to remain associated with that organization or are interested in seeking work with another firm. If people are generally happy in their work and regard it as a good place to work, then their commitment to the organization is likely to be stronger than for those where this is not descriptive of their work experiences.

In Table 5, we see results that show organization size as a minor explanatory variable of the strength of workers' commitment to their current employer. Organization size accounts for only one per cent of the variance, while assessments of individual promotion opportunities in an organization is again the most important predictor. Personal characteristics of individual respondents such as their age, and their situation off the job in personal matters related to finances, health, marriage, and so on, explain a sizeable proportion of the variance, as well. Supervision, work autonomy, and group factors, each account for more of the explained variance than organization size, but all are relatively unimportant predictors.

TABLE 5

REGRESSION RESULTS WITH INDIVIDUAL'S ASSESSMENT OF THEIR COMMITMENT TO THEIR CURRENT EMPLOYER AS DEPENDENT VARIABLE

(To ensure parsimony, only those variables significant at at least the 001 level were allowed to enter the equation)

$R = .58$ ($<.001$) $R^2 = 33.3\%$ $N = 352$

Variables In Regression Equation	Beta	Variance Explained By Each Variable	Cluster	Variance Explained By Each Cluster
1. Organization Size	.121	1.1%	Organization Size	1.1%
2. Promotion Opportunities	.239	13.8%	Promotions	13.8%
3. Age of Worker	.206	6.4%	Personal Characteristics	12.6%
4. Personal Situation of Worker Outside of Job	.126	4.5%		
5. Pay Rate	.139	1.7%		
6. Supervision Style - Initiation of Structure	.135	2.7%	Supervision	2.7%
7. Non-Work-Task Autonomy From Supervisor	.127	1.8%	Work Autonomy	1.8%
8. Positive Feelings About Work Group	.128	1.4%	Groups	1.4%

We have made reference to work autonomy here, and earlier it appeared as a variable in Table 4. "Work autonomy" refers to the control that workers are able to exercise in their work, whether this control is over its organization, pace, speed, or whatever. If one observes people at their jobs, there are two major types of activities in which they are engaged. There are those activities directly related to the work-task itself - i.e., the production of widgets, etc. There are also those periods when a worker is not engaged in activities directly related to the work task, such as when lulls occur on the job because of breakdown, completion of tasks, shortage of materials, and so on. During these lulls in the job, the worker can be said to be engaged in non-work-task activities. When we refer to autonomy on the job, we need to make explicit whether we are referring to "work-task" or "non-work-task" autonomy. We will also specify in our analyses whether it is autonomy from a supervisor, a group, or individuals on the job. In the case of this regression equation for worker commitment to the organization, it is specifically non-work-task autonomy from the supervisor that is a predictor.

Labour Relations Climate

Respondents were asked to rate the labour relations in their organization compared with those in other organizations with which they were familiar. When this assessment of labour relations is the dependent variable, results in Table 6 demonstrate a pattern similar to those we have observed for our first two regressions. Organization size again accounts for very little of the variance, explaining less than two per cent of labour relations' assessments. As we have seen before, promotion opportunities is the most important predictor accounting for over eleven per cent of the variance. Variables related to supervision including an initiation of structure style and company recognition of individual workers and their work performances together account for over seven per cent of the variance. Positive feelings about the group one works with also is slightly more explanatory than organization size.

Satisfaction With Work

We noted earlier that our measure of individual job satisfaction would be the Cornell Job Description Index. From the five dimensions of the job it includes (work, pay, promotions, people, supervision), we have selected the satisfaction with work dimension as an example of the effects of organization size. A substantial proportion of the variation (almost 50 per cent) in satisfaction with work is accounted for by those predictors in the equation summarized in Table 7. It will be noted, however, that organization size was not a significant enough predictor even to be included in this particular equation. Interestingly enough, promotion opportunities do not appear either. Instead, the most important variable is the opportunity for a person to use their skills in their work. The importance of this variable is entirely consistent with a very large body of previous research on this topic. Supervision and personal characteristics are also important clusters.

TABLE 6

REGRESSION RESULTS WITH WORKER'S ASSESSMENT OF LABOUR RELATIONS IN THE COMPANY AS DEPENDENT VARIABLE

(To ensure parsimony, only variables significant at at least the 001 level were allowed to enter the equation)

$R = .48$ ($<.001$) $R^2 = 23.1$ $N = 352$

Variables in Regression Equation	Beta	Variance Explained By Each Variable	Cluster	Variance Explained By Each Cluster
1. Organization Size	.133	1.9%	Organization Size	1.9%
2. Promotion Opportunities	.229	11.3%	Promotions	11.3%
3. Supervision Style - Initiation of Structure	.179	4.7%	Supervision	7.2%
4. Company Recognition of Work Efforts	.143	2.5%		
5. Positive Feelings About Work Group	.145	2.0%	Groups	2.0%
6. Personal Situation of Worker Outside of Job	.093	.8%	Personal Characteristics	.8%

TABLE 7

REGRESSION RESULTS WITH INDIVIDUAL SATISFACTION WITH WORK AS DEPENDENT VARIABLE

(To ensure parsimony, only variables significant at at least the 001 level were allowed to enter the equation)

$R = .69$ ($<.001$) $R^2 = 47.8\%$ $N = 352$

Variables in Regression Equation	Beta	Variance Explained By Each Variable	Cluster	Variance Explained By Each Cluster
1. Opportunity to Use One's Skills	.389	31.1%	Job Placement	31.1%
2. Company Recognition Of Work Efforts	.196	6.6%	Supervision	7.8%
3. Supervision Style - Initiation of Structure	.112	1.2%		
4. General Autonomy In Job	.107	1.0%	Work Autonomy	1.0%
5. Pay Rate	.184	4.7%	Personal Characteristics	7.9%
6. Age of Worker	.184	3.2%		

Total Job Satisfaction

Table 8 contains the results for our final regression where total job satisfaction is the dependent variable. The trend of organization size as an unimportant predictor continues here, as less than one-twentieth of the explained variance in total job satisfaction is attributable to organization size. Supervision, promotion opportunities, group cohesiveness, and opportunities to use one's skills are all more important predictors of total job satisfaction.

Summary

We noted earlier that size might influence certain characteristics of an organization's structure, but of particular importance in explaining individual attitudes and behaviours of members is what is done and how it is done within those structural parameters. We suggested that the mobility opportunities within the organization, the nature and quality of supervision, the autonomy afforded workers in their jobs, and the opportunities for cohesive groups and other smaller social networks to develop would all be more important predictors than size.

Our results show substantial, and in most cases, positive associations between organization size (logarithmic transformation of the number of production workers) and a number of dependent measures of individual attitudes and performance. The fact that most of the relationships were positive rather than inverse is probably in some measure associated with the distribution of technologies employed by the organizations in our sample. Some of the smaller plants in the sample have assembly-line components in their technologies, some of the middle-size plants have machine-tending jobs, and process technology characterizes one of the larger plants. We have not, however, dealt with technology in any systematic fashion because of the relatively small number of organizations in the sample.

Our regression results have demonstrated the relative importance of organization size as a predictor. In none of our regressions did organization size figure as anything but a minor predictor. Mobility opportunities within the organization, supervision style (initiation of structure, in particular), opportunities to use one's skills at work, personal characteristics such as a person's age or their situation off the job (marriage, finances, etc.), and autonomy on the job were all usually more important than size as predictors of various indicators of the health of labour relations. In the next section, we will examine the relationship between organization size and another indicator of labour relations - strikes.

STRIKES

The quality of an organization's labour relations is often visibly reflected in the frequency and duration of strikes in which it is involved. Unfortunately data available to us did not involve a sufficient number of organizations to allow the same systematic assessment of the relative

importance of size effects on strike activity. Instead, we will review some of the research literature on organization size and strikes and assess their findings in the context of our understanding of size as a predictor. Revans (1958), whose work on British coal miners we have already reviewed, reports that for miners there is a strong positive relationship between size of the mine and the frequency and severity of strikes. That is, as the size of mine increases, there is a likelihood that the number of strikes and the length of strikes experienced will increase as well. He also reports on a U.S. study of 82 factories near Trenton, New Jersey. This study found that the probability of an industrial dispute rises significantly as the plants increase in size (cf., Influence of Plant Size on Industrial Relations, 1955).

Another indicator of industrial conflict is contract rejections; i.e., when a recommended contract settlement is rejected by the rank-and-file. Simkin (1968) looked at the rank-and-file rejections of proposed settlements in 1966 and 1967 in negotiations in the United States where a government mediator was actively employed. For 15,029 contract rejections, he reports that there was a positive relationship between size of the bargaining unit and the percentage of rejections. Size of the bargaining unit is not the same as our measure of organization size, as an organization's production workers may have different skills, specialities, etc. and so in any given organization, there frequently may be more than one bargaining unit. There may also be fewer than one bargaining unit per organization, as is the case in multi-shop and industry-wide bargaining.

Britt's (1974) study of strikes employs a methodology found in other similar studies (cf., Shorey, 1975). Instead of looking at organizations and relating these to strike behaviour, data for whole industries are employed and an average size for organizations or plants is calculated. This average may or may not be representative of the situation in a given industry, depending on the nature of skewness in actual size distributions. At best, such industry examinations of strike behaviour will yield approximations of strike behaviour and are unlikely to greatly facilitate our understanding of strikes and organization size.

Using statistics on both strikes and lockouts (labour conflict) for the United States during 1968, 1969, and 1970 as his dependent variable, Britt found the average plant size in an industry to be inversely related to the frequency of conflict, the volume of conflict (number of man-days idle), the breadth of conflict (number of workers involved in the conflict), and the duration of the conflict (days lost). On the other hand, positive relationships between degree of unionization of the industry and average union size were observed with frequency, volume and breadth of conflict. These two variables also had a negative association with the duration of the conflict.

TABLE 8

REGRESSION RESULTS WITH INDIVIDUAL TOTAL JOB SATISFACTION AS DEPENDENT VARIABLE

(To ensure parsimony, only variables significant at at least the 001 level were allowed to enter the equation)

$R = .70$ ($<.001$) $R^2 = 48.5$ $N = 352$

Variables in Regression Equation	Beta	Variance Explained By Each Variable	Cluster	Variance Explained By Each Cluster
1. Organization Size	.154	2.4%	Organization Size	2.4%
2. Company Recognition of Work Efforts	.246	23.2%	Supervision	25.9%
3. Supervision Style - Initiation of Structure	.173	2.7%		
4. Promotion Opportunities	.245	10.9%	Promotions	10.9%
5. Group Cohesiveness	.149	4.7%	Groups	4.7%
6. Opportunity to Use One's Skills	.149	2.6%	Job Placement	2.6%
7. General Autonomy in Job	.110	1.1%	Work Autonomy	2.0%
8. Non-Work-Task Autonomy From Supervisor	.116	.4%		
9. Non-Work-Task Autonomy From Group	.090	.5%		

Shorey (1975) employed a similar methodology on industry statistics for the whole of the manufacturing sector in the United Kingdom for the period 1963-67. Unlike Britt, he found a positive association between average plant size in an industry and frequency of strikes. Whether this difference is accountable for by Britt's inclusion of lockouts, or cross-national differences (U.S. versus U.K.), or industry averaging, we cannot be sure.

In a study involving manufacturing plants in Illinois and Iowa, Eiselle (1970) detected a curvilinear relationship between plant size and strike frequency. The frequency of strikes increased with rises in organization size for organizations with between 50 and 750 employees, but beyond 750 employees, decreasing strike frequencies were more likely for larger organizations.

In a later study (Eiselle, 1974), he looked at the effects of technology as well as organization size on strike patterns. Significant positive relationships were observed between size and strike frequency for organizations with process, large batch, or mass technologies. No relationship between size and strike frequency was found for unit and small batch technology-type organizations.

Even on a single dimension of industrial conflict such as the frequency of strikes, we see no clear pattern. Revans and Shorey report a positive relationship with size, Britt obtains a negative relationship, and Eiselle a curvilinear relationship.

Eiselle's findings on the effects of technology, when size was controlled, are worth noting, as they suggest that on this dimension of labour relations, organization size may tend to be a largely spurious predictor, as we earlier observed to be the case in our analyses of the previous section on other dimensions.

In order to determine what the situation might be in the Canadian context, we have made calculations using raw data available in the report of The Royal Commission Inquiry Into Labour Disputes, 1968. The data are for strikes in Ontario between 1958 and 1967. During this time, there were 1,786 strikes and the Commission data are based on 800 of these, or 45 per cent of the total. The data were gathered through questionnaire responses from unions and employers involved in the work stoppages. Information is provided on the size of the plant (total number of employees at a plant, including the supervisory staff and the office workers, and the duration of the strike in days).

Our analyses are based on the data for strikes in manufacturing. The number of manufacturing establishments in Ontario, according to their distribution by size, was determined for the 1958-1967 period. The frequency of strikes per each size category was calculated by dividing the number of strikes in each size category for which data were available, by the number of establishments of that particular size range. These results are presented in Table 9 and Figure 1.

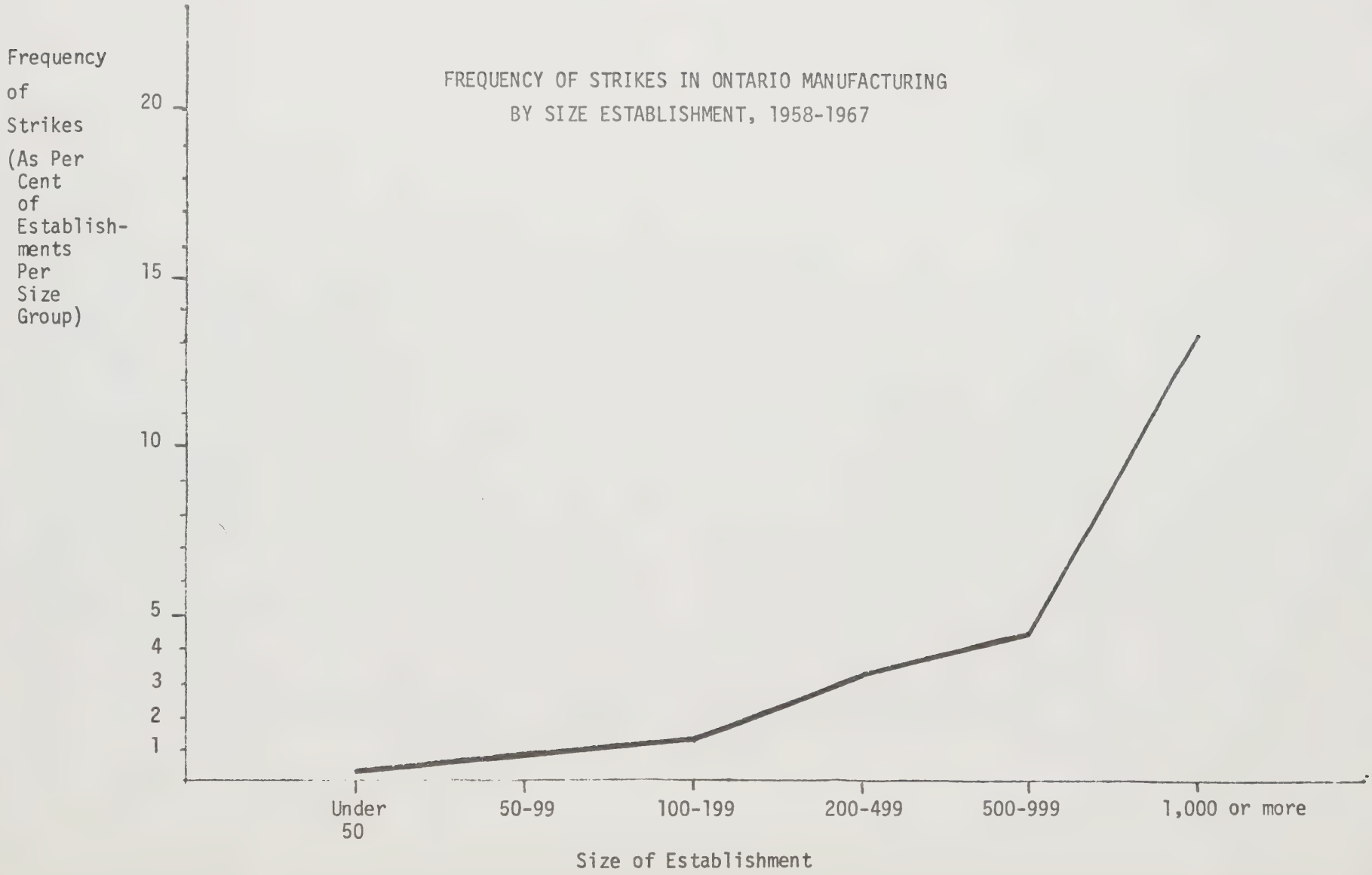
TABLE 9

FREQUENCY OF STRIKES IN ONTARIO MANUFACTURING BY SIZE OF ESTABLISHMENT, 1958-1967

Establishment Size	Frequency of Strikes									
	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Under 50 Employees	.07% (8)	.03% (3)	.03% (3)	.03% (3)	.06% (6)	.09% (9)	.08% (8)	.08% (8)	.10% (10)	.05% (5)
50 - 99	.32% (3)	.2% (2)	1.1% (11)	.4% (4)	.37% (4)	.73% (8)	.64% (7)	.88% (10)	.84% (10)	.77% (9)
100 - 199	1.0% (6)	.5% (3)	.65% (4)	1.8% (11)	1.3% (11)	.14% (1)	.42% (3)	1.8% (13)	3.1% (24)	.89% (7)
200 - 499	2.0% (8)	1.9% (8)	2.2% (9)	1.6% (6)	1.3% (6)	2.5% (12)	3.7% (18)	6.0% (31)	7.3% (39)	2.4% (13)
500 - 999	2.0% (2)	.88% (1)	1.9% (2)	2.0% (2)	2.5% (3)	1.7% (2)	8.9% (12)	9.6% (14)	11.8% (18)	3.3% (5)
1,000 or more	9.0% (5)	11.9% (7)	5.5% (3)	5.4% (3)	10.2% (6)	15.2% (10)	21.4% (15)	30.4% (24)	25.3% (22)	7.0% (6)

Source: Calculated from Report of The Royal Commission into Labour Disputes, 1968, and Manufacturing Industries of Canada 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967.

FIGURE 1


FREQUENCY OF STRIKES IN ONTARIO MANUFACTURING
BY SIZE ESTABLISHMENT, 1958-1967
Frequency of Strikes (As Per Cent of Establishments Per Size Group)
20
15
10
5
4
3
2
1
Under 50
50-99
100-199
200-499
500-999
1,000 or more
Size of Establishment

It can be noted in Table 9, for example, that in 1967, less than one per cent of the manufacturing establishments in Ontario with fewer than fifty employees experienced a strike; whereas, seven per cent of the larger establishments with 1,000 or more employees experienced a strike. Overall these data represent a clear positive relationship between the size of plants and the frequency of strikes they experience. As the size of establishments increases, so does the probability of strikes.

The duration of strikes according to plant size for Ontario manufacturing establishments are summarized in Table 10 and Figure 2. These show an opposite trend. As organization size increases, there is a tendency for the median duration of the strike in days to decrease.

Since these calculations were completed, L.A. Kelly (1976) has reported on data for 1975. He observes that in British Columbia and Ontario, "the larger the bargaining unit, the higher is the incidence of strikes." In an analysis of bargaining unit size in Ontario alone for 1975, his results in Table 11 support the trend that as the bargaining unit size in manufacturing organizations increases, positive increases are also observed in the frequency of strikes. The duration of strikes is, again, inversely related to size of bargaining unit.

Kelly's explanations for his findings relating size, frequency, and duration have a familiar ring to them. He speculates the following:

> What the pattern reflects, we would suggest, is the growing impersonality of the labour-management relationships as bargaining unit size increases. This explanation is not inconsistent with the longer average duration of strikes in small bargaining units. As is well known, family quarrels are often the most long-lasting (Kelly, 1976:3).

Negotiating behaviour is a very, very complex process and in view of our earlier findings on the relative unimportance of size as an explanatory variable, explanations of strike patterns as related to bargaining unit size and alienation are unlikely to prove enduring when more systematic analyses are performed. Without reference to multi-variable, longitudinal analyses, there are no data-based explanations that we may relate to with any degree of confidence. At this point, all we can observe is that there are some consistent patterns over a number of years between size of organization and the frequency and duration of strikes in Ontario manufacturing establishments.

TABLE 10

DURATION OF STRIKES IN ONTARIO MANUFACTURING BY SIZE OF ESTABLISHMENT, 1958-1967

Size of Establishment	Median Duration of Strike in Days									
	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Under 50 Employees	26.5	9	15	4	6.5	11	32	63.5	24	30
50 - 99	17.5	39.5	29	12	9	30	7	13	4	29.5
100 - 199	15.5	116	4.5	17	23	61	1	15	7	12
200 - 499	21	5	10	43.5	15	7.5	24.5	4	6	5
500 - 999	30	26	53	3	3	22	12	17.5	3.5	1
1,000 or more	20	3	7	2	4.5	2.5	2	13.5	5	1.5

Source: Calculated from Report of The Royal Commission into Labour Disputes, 1968, and Manufacturing Industries of Canada 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967.

FIGURE 2

DURATION OF STRIKES IN ONTARIO MANUFACTURING
BY SIZE OF ESTABLISHMENT, 1958-1967

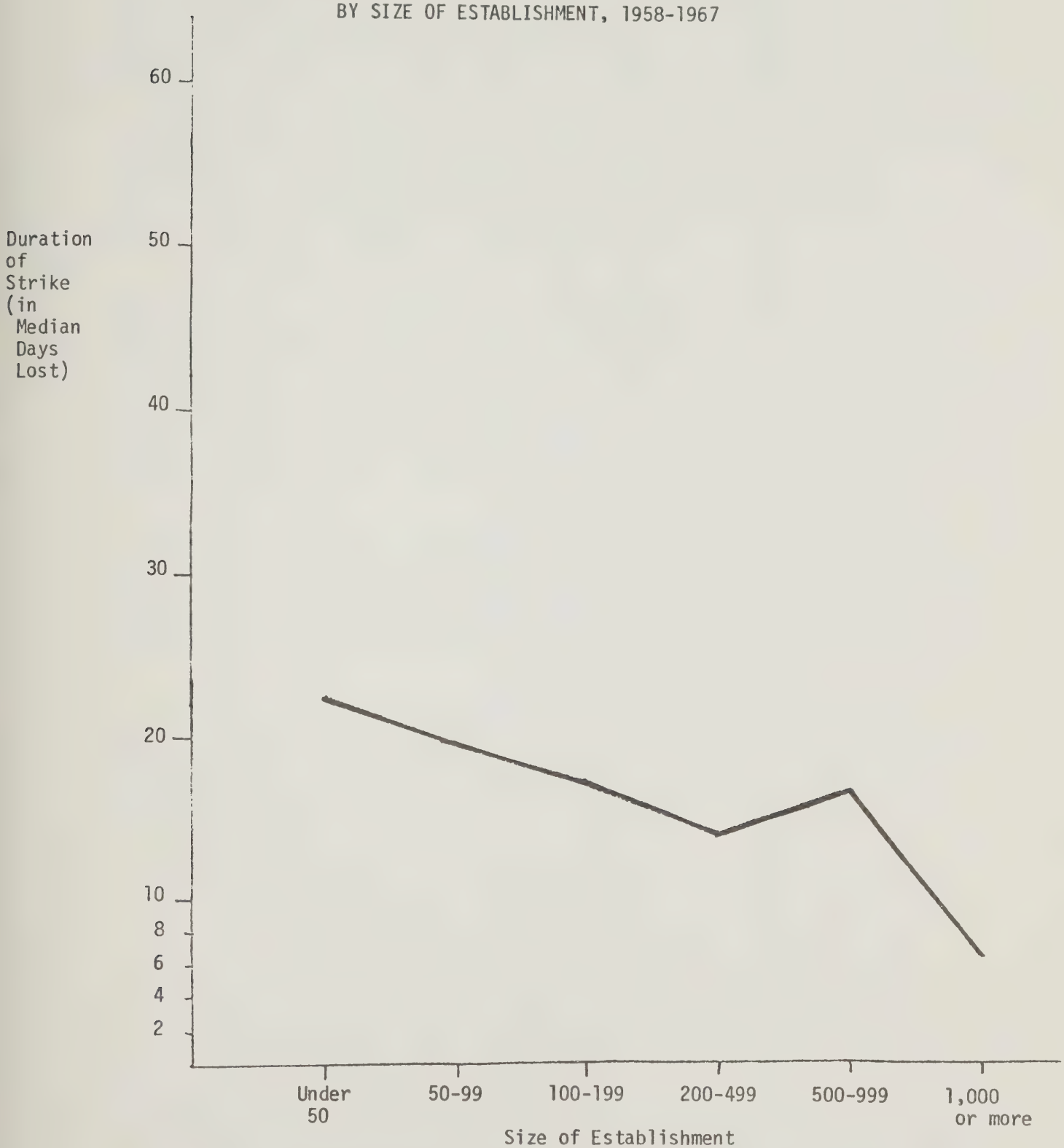


TABLE 11

FREQUENCY AND DURATION OF STRIKES IN ONTARIO MANUFACTURING BY BARGAINING UNIT SIZE FOR 1975

	Bargaining Unit Size			
	1-24	25-99	100-499	500 or more
Frequency of Strikes to achieve Settlements	4.5%	9.5%	16.0%	24.0%
Average Duration of Strike (Days)	57.7%	42.3%	38.8%	20.1%

Source: L.A. Kelly in IR Research Reports, 1976.

SUMMARY AND CONCLUSIONS

Social concerns are a characteristic of all social groupings and societies. One of the more enduring themes in recent times has been the notion that organizations are becoming too big. Our focus in this paper has been to examine the effects of size, if any, on individuals and labour relations within organizations.

A review of past research on organization size revealed the generally inadequate state of our knowledge on the effects of this variable. In view of this deficiency, our approach was to assume that there is no theoretical or empirical basis for believing that organization size by itself will be a major variable contributing to explanations of variance in the attitudes and behaviour of individual members.

Data from a sample of production workers in manufacturing organizations were employed to test the validity of this perspective. The relative importance of the size of an organization (as measured by the logarithmic transformation of the number of production employees at each establishment) was found to be very minimal. Instead, the mobility opportunities for employees within their organizations, the nature and quality of supervision, the opportunities for cohesive groups and other social networks to develop, and the autonomy afforded workers in their jobs were all found to be more important factors for our sample.

An examination of the frequency and duration of strikes for manufacturing organizations revealed certain associations with organization size. The frequency of strikes was positively related, and the duration of strikes inversely related to organization size. In the absence of data on the qualitative features of labour-management relations, we are not able to undertake more systematic analyses to determine the relative effects of size.

With the trend in advanced industrial societies toward increasing organization size, it is curious that so little systematic analysis and research has been undertaken to assess the consequences of this development. The mythology about the demons of organization size is well developed and until such time as empirically-based knowledge is available, will undoubtedly continue to thrive.

NOTES

1. There is a conventional distinction between an "enterprise" and an "establishment". Any enterprise may conduct its affairs at a number of locations and each site is known as an "establishment".

2. It is interesting to note that there has been research to demonstrate a negative association between organization size and organization turnover rates (i.e., tendency for organizations to discontinue operations) (cf., Chapin; Lipset and Bendix, 1952).

3. The limited time available for completion of this research prohibited the collection of original data to test our model. Instead, analyses of data already at hand were employed for these purposes.

4. There are several strategies we might employ in our regression analyses. We might first of all let organization size explain all the variation it can and then introduce the other variables. Or, we could let the most significant variable enter first and then enter the other variables in descending order of significance. There being no theoretical reason for including organization size first, we have opted for the latter alternative in our analyses.

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